

Land Drainage in Co. Clare¹

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UNDER the land project scheme (1949-1976) nearly 32,000 ha in Co. Clare were drained or improved with the help of state aid to the tune of £1.8 million. This has undoubtedly led to a much better stock carrying capacity on these lands, especially where the farmer followed up drainage with better management and improved fertility. Unfortunately, due to carelessness in keeping drains open, quite an area of these drained acres have been allowed to revert to their original state. With the price of good land around £1,000 per acre and the letting price in excess of £50 per acre in many cases, the time is now opportune to have a look at the present position of land drainage in the county, and to examine the contribution it can make to improving farmers incomes by increasing their capacity to keep extra stock.

Soils of County Clare

According to the National Soil Survey of Ireland (1971) 39% of the soils in Clare have free natural drainage, 32% of the soils are impeded and require artificial drainage. The remaining 29% are variable types and peatland, and for the most part also require drainage to be of use either for grassland or forestry. This means that about 60% of the soils representing a total of about 188,000 ha are suffering to a greater or lesser extent from excessive water problems. Even if we subtract from this figure the acreage already drained and lands which at this point in time may not be economically feasible to drain, we are still left with over 100,000 ha which could be economically drained. This is land with a very poor stocking rate at present and which, in general, makes very little contribution to its owner's income.

Drainage Problems

The main drainage problems in Clare arise from impermeable soils, due to their nature and also due to compaction. The second type that creates problems are peats of various types. Thirdly, we have a combination of both — with varying depths of peat overlying an impermeable subsoil. In the past it was extremely difficult to find a cure for these problems, but in latter years, due to the combined efforts of An Foras Taluntais, the Agricultural Advisory Service, the Farm Development Service and a few farmers who were willing to experiment, it is now possible to cure the vast majority of drainage

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2. Golden Vale, Clare Advisory Officer.

problems. The best way to illustrate how the job is being tackled is to take a cross section of the work being done by farmers in different areas.

Case No. 1 — The type of problem faced by Paddy Bugler, Mountshannon, and Tim Treacy, Scariff, is typical of about 16,000 ha in the East Clare area. In 1975 the staff of the Scariff office of the County Committee of Agriculture initiated a research and advisory programme in conjunction with Mr. Liam Galvin of An Foras Taluntais. A 2 ha field belonging to Mr. T. Treacy was selected. This field was practically useless. The top soil was like glue lying on top of a subsoil that was compacted hard and completely impermeable to the downward movement of water. The following series of operations were carried out on it:

1. Light rotovating.
2. Water courses opened and scrub removed.
3. The field was ripped using a 3 shank ripper mounted on a cat D7 dozer to a depth of about 50cm. The field was ripped in 2 directions at right angles to one another, but it is now felt by instructor Michael McGrath that a double ripping in the same direction is more effective.
4. Field levelled with D4 dozer.
5. Field drains laid with McConnell trenchless drain layer at 61 to 68cm at 31m spacings. The drains were of 60mm plastic piping covered with 20mm washed gravel to within about 30cm of the surface.
6. Land was then rotovated, levelled, fertilised and reseeded.

At the end of May 1976, in one cut for silage the yield of fresh material was a remarkable 40 tonnes per ha. The field was then grazed up to November and will be ready for cutting quite early this year. Since then, approximately 28 ha in the area on seven different farms have been ripped and are in the course of being reclaimed.

Typical of these is Mr. Paddy Bugler of Mountshannon. His farm is fragmented and because of this he is limited in the number of cows he can carry. He is now in the process of draining in the above fashion 24 ha of land in one block which he plans to be the centre of his dairy unit in the future, but which at the moment is of very little value to him. The one factor which he feels is limiting the amount of work that could be done is the scarcity of the specialised type of machinery needed. An approximate cost of the different machines mentioned previously works out in the region of £100,000. Few private contractors can afford this type of investment in machinery. The total contract cost per ha (including lime, fertiliser and seed) is in the region of £640. After a grant of approx. £270 the net cost to the farmer works out at about £370 per ha.

Case No. 2 — Joe Ryan and Martin Quelly are two dairy farmers working with an exceedingly difficult soil in the Inagh area. It is a poor structured Drumlin type soil of shale origin. In 1974 they travelled to Ballinamore and saw what was being done with land similar to their own by John Mulqueen of An Foras Taluntais, who is an expert in draining this type of land. They came home and installed a system of mole drains and tiled catchment drains under the direction of John Mulqueen and local advisor, Tom Woulfe. A McConnell trencher supplied by the Agricultural Institute was used for the catchment drains and the moles were pulled by drawing a mole plough (supplied by Golden Vale) with 110 h.p. tractor.

As a result of this work, Joe Ryan has built up his cow numbers to 58 on his 45 ha farm and hopes eventually to reach 80-90 cows when all drainage work is done. There is evidence in some fields of a breakdown in the moles after two years and re-moling will probably be necessary. Joe feels that draining with filled moles would probably be a better job and that this type of work (and also re-moling) should be grant aided.

As a result of the improvement brought about by drainage, Martin Quelly increased his cow numbers on his 12 ha home farm from 10 to 28 this year. The outside farm (also around 12 ha) is being used for providing silage and rearing the large number of replacement and extra stock he has needed up to now. Without drainage he says himself that he "just simply would not be able to get a living on that farm." After grant, cost worked out at about £148 per ha but a lot of the work was done by farmers themselves and gravel was available locally.

Case No. 3 — P. J. McGuane has built up cow numbers from 12 to 40 on his 24 ha farm in Cooraclare. His problem was how to drain cut away bog. He solved it with the help of local instructor, Murt Collins, and Land development Officer, Tom O'Dwyer. He opened a series of drains into deep catchment drains. The field drains were opened to an average depth of 1 meter and filled to within 15cm of the surface with gravel (available on the farm). They were opened about 18m apart. P. J. has been lucky in that the type of peat he is dealing with is of a broken down nature with a fair degree of permeability. The gross cost of the entire operation would be about £495 per ha if one takes into account the cost of purchasing gravel/chips. The net cost would be in the region of £245 per ha.

A few miles from P. J. McGuane up in Cree, Jim Kelly has started reclamation work on 16 ha. Deep open watercourses are presently being opened. His problem is again different to McGuane's in that there is a shallow depth of peaty type soil overlying a sticky gleyed sub soil. Drainage of this type will eventually have to include the

bursting of this sub soil, probably in some fashion similar to East Clare.

Conclusions

1. Draining the wet land of the county can be done. The technology and techniques of doing it are there, and the proof of success is there in plenty.
2. Demand for drainage is building up among the community. "Since the inception of the Farm Modernisation Scheme, farmers have contracted to drain and reclaim 12,000 ha" (Mr. Stephen Fahy, Deputy C.A.O., Co. Clare).
3. In Co. Clare at the moment, there are around 250,000 livestock units. With drainage and minimum nitrogen applications An Foras Taluntais estimate that the stock carrying capacity can be increased to 373,000 livestock units. If this could be brought about it would give a tremendous boost to farmers' incomes and would also be of great benefit to Golden Vale and the livestock marts.
4. "Each farm has its own drainage problems and what may cure one farmer's problem may not necessarily be the best method for his neighbour" (Mr. Liam Jones, Deputy C.A.O., Co. Clare). Liam feels that the best type of drainage should be ascertained individually in each case. He would also like to see deep ploughing tried out in certain areas, especially where you have an absorbent spongy peaty layer overlying gleyed sub soil.
5. A major limiting factor at the moment seems to be the scarcity of the specialised machines needed to do the job. While there seems to be adequate bulldozers and J.C.B.s there is a lack of trenchless pipe laying machines, rippers, deep ploughs, mole draining equipment, stoning carts, heavy cultivating and levelling equipment, etc. The need is great; the work is there. It is up to farmers and farm leaders to see that this need is met.

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